Please cancel Claim 12 without prejudice or disclaimer of subject matter, and amend Claims 1 to 11 and 13 to 31 as shown below. The claims, as pending in the subject application, now read as follows:

1. (Currently amended) A pattern identification method for hierarchically extracting features of input data, and identifying a pattern of the input data, ~~characterized by~~ comprising:

performing by a pattern identification device the following:

a first feature extraction step of extracting features of a first layer;

a determination step of determining a model to be used for ~~method of~~ extracting features of a second layer higher than the first layer on the basis of feature extraction results in the first feature extraction step; and

a second feature extraction step of extracting features of the second layer by using the model ~~on the basis of the method~~ determined in the determination step.

2. (Currently amended) The method according to claim 1, wherein ~~characterized in that the~~ determination step includes a step of analyzing a distribution of feature extraction results in the first feature extraction step, and determining the model ~~method~~ based on the analyzed distribution.

3.  (Currently amended)  The method according to claim 2, wherein ~~characterized in that~~ the determination step includes a step of calculating likelihood values of a plurality of features of the second layer on the basis of the distribution, and determining features which have the calculated likelihood values not less than a predetermined value as objects to be extracted.

4.  (Currently amended)  The method according to claim 1, wherein ~~characterized in that~~ the first or second feature extraction step includes a step of extracting features obtained by applying predetermined conversions to a predetermined feature.

5.  (Currently amended)  The method according to claim 1, ~~characterized by~~ further comprising a re extraction step of re-extracting ~~re extracting~~ features of a lower layer on the basis of the feature extraction results of an upper layer in the second feature extraction step.

6.  (Currently amended)  The method according to claim 2[[1]], wherein ~~characterized in that~~ the determination step includes a step of analyzing distributions of the plurality of feature extraction results, and analyzing a relative relationship among the individual analysis results.

7.  (Currently amended)  The method according to claim 2[[1]], wherein ~~characterized in that~~ the determination step includes a step of analyzing a distribution of at least one feature extraction result within a specific range.

8.  (Currently amended)  The method according to claim 2[[1]], wherein ~~characterized in that~~ the determination step includes a step of analyzing if the feature is extracted or not extracted within a predetermined range in a distribution of at least one feature extraction result.

9.  (Currently amended)  The method according to claim 2[[1]], wherein ~~characterized in that~~ the determination step includes a step of analyzing a barycentric position of a distribution of at least one feature extraction result.

10.  (Currently amended)  The method according to claim 2[[1]], wherein ~~characterized in that~~ the determination step includes a step of analyzing a size of a range from which the feature is extracted or not extracted in a distribution of at least one feature extraction result.

11.  (Currently amended)  The method according to claim 2[[1]], wherein ~~characterized in that~~ the determination step includes a step of analyzing a sum total of likelihood values or feature detection levels of at least one feature extraction result.

12.  (Canceled)

13. (Currently amended)  The method according to claim 1[[12]], wherein ~~characterized in that~~

the first feature extraction step includes a step of extracting features by setting models, and a model used in the second feature extraction step is formed by combining predetermined models used in the first feature extraction step,

the first detection step includes a step of calculating feature amounts of the models with respect to forming parts of the pattern by comparing the models used in the first detection step and the forming parts of the pattern, and

the determination step includes a step of determining a specific model to be a model to be set on the basis of feature amounts of models which form the specific model.


14. (Currently amended)  The method according to claim 13, wherein ~~characterized in that~~ the determination step determines a specific model ~~includes a step of determining~~, when all the models which form the specific model have a predetermined feature amount~~, the specific model as the model to be set~~.


15. (Currently amended)  The method according to claim 1[[12]], wherein ~~characterized in that~~ the determination step determines ~~includes a step of determining~~ a plurality of models which are formed by rotating an identical model at a plurality of angles ~~as models set to be set~~.

16. (Currently amended)  The method according to claim <u>1</u>[[12]], <u>wherein</u> ~~characterized in that~~ the determination step includes a step of limiting the number of models to be <u>determined</u> [[set]] on the basis of feature amounts calculated for the models.


17. (Currently amended)  The method according to claim 15, <u>wherein</u> ~~characterized in that~~ the determination step includes a step of selecting rotation angles of low order models having feature amounts not less than a predetermined amount of the calculated feature amounts of the low order models, and determining high order models corresponding to the selected rotation angles as the models to be <u>determined</u> [[set]].


18. (Currently amended)  The method according to claim 15, <u>wherein the</u> <u>determination step includes a step of selecting</u> ~~characterized in that~~ rotation angles of low order models, which have higher order in the order of feature amounts, of the calculated feature amounts of low order models~~, are selected,~~ and <u>determining</u> high order models corresponding to the selected rotation angles <u>as the models to be determined</u> ~~are set~~.


19. (Currently amended)  The method according to claim 16, <u>wherein</u> ~~characterized in that~~ the rotation angles of low order models are measured on the basis of the calculated feature amounts of the low order models, and the number of high order models is limited using the measured rotation angles.

20. (Currently amended)  The method according to claim 15, ~~characterized by~~ further comprising a change step of changing a rotation interval of a plurality of angles upon setting a plurality of models rotated at the plurality of angles, <u>wherein</u> ~~and in that~~ the change step includes a step of decreasing the rotation interval of models in a higher order layer.

21. (Currently amended)  The method according to claim 13, <u>wherein</u>
~~characterized in that~~

      a predetermined reference model is held, and

      the determination step includes a step of determining a model obtained by converting the reference model using the calculated feature amount as a model to be <u>determined</u> [[set]].

22.    (Original)  The method according to claim 1, <u>wherein</u>

      a ~~characterized in that~~ predetermined reference <u>model</u> [[data]] is held, and

      the determination step includes a step of determining <u>the model</u> [[data]] used in the second feature extraction step on the basis of the reference <u>model</u> [[data]] and feature extraction results in the first feature extraction step.

23. (Currently amended)  The method according to claim 22, <u>wherein</u>
~~characterized in that~~ the determination step includes a step of determining <u>a model</u> [[data]] to be used at each spatial position of an input signal.

24. (Currently amended) The method according to claim 22, <u>wherein</u> ~~characterized in that~~ the reference <u>model</u> [[data]] is data used to detect a plurality of features which form a typical pattern of the predetermined pattern,

the determination step includes a step of converting the held reference data on the basis of a positional relationship between the plurality of features extracted in the first feature extraction step, and

the second feature extraction step includes a step of determining a presence/absence of the predetermined pattern included in the input signal on the basis of correlation between the converted reference <u>model</u> [[data]] and the input signal.


25. (Currently amended) The method according to claim 1, <u>wherein</u> ~~characterized in that~~ the determination step includes a step of determining a size of an input range from a detection result of a previous layer used in feature detection in the first feature extraction step on the basis of the feature extraction results in the first feature extraction step.


26. (Currently amended) The method according to claim 25, <u>wherein the</u> ~~characterized in that~~ determination step includes a step of determining a size of the input range for each spatial position of an input signal.


27. (Currently amended) The method according to claim 1, ~~characterized by~~ further comprising:

a result holding step of holding the feature extraction results in the first feature extraction step;

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a parameter acquisition step of obtaining a parameter on the basis of the detection results held in the result holding step; and

a change step of changing the feature detection results to be read out in the second feature extraction step on the basis of the parameter obtained in the parameter acquisition step.


28. (Currently amended)  The method according to claim 1, <u>wherein</u> ~~characterized in that~~ the input data is an image, and each of the first and second feature extraction steps includes a step of extracting features which form a face.


29. (Currently amended)  A pattern identification device for hierarchically extracting features of input data, and identifying a pattern of the input data, ~~characterized by~~ comprising:

a first feature extraction <u>unit adapted to extract</u> ~~means for extracting~~ features of a first layer;

a determination <u>unit adapted to determine a model to be used</u> ~~means for determining a method of~~ extracting features of a second layer higher than the first layer<u>,</u> on the basis of feature extraction results in the first feature extraction <u>unit</u>[[step]]; and

a second feature extraction <u>unit adapted to extract</u> ~~means for extracting~~ features of the second layer <u>by using the model</u> ~~on the basis of the method~~ determined by said determination <u>unit</u> ~~means~~.

30.  (Currently amended)  The device according to claim 29, ~~characterized by~~ further comprising an image sensing unit adapted to sense and input ~~means for sensing and inputting~~ an image as the input data.

31.  (Currently amended)  A computer-readable storage medium storing a ~~computer readable~~ pattern identification program, which makes a computer hierarchically extract features of input data, and identify a pattern of the input data, said program making ~~makes~~ the computer execute:

a first feature extraction sequence for extracting features of a first layer;

a determination sequence for determining a model to be used for ~~method of~~ extracting features of a second layer higher than the first layer, on the basis of feature extraction results in the first feature extraction sequence; and

a second feature extraction sequence for extracting features of the second layer by using the model ~~on the basis of the method~~ determined in the determination sequence.